

<p>1st Six Weeks August 24 – October 2</p>	<p>2nd Six Weeks October 5 – November 6</p>	<p>3rd Six Weeks November 9 – December 18</p>
<p><u>Force & Motion</u></p> <ul style="list-style-type: none"> • Demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion. • Differentiate between speed, velocity, and acceleration. • Investigate and describe applications of Newton's law of inertia, law of force and acceleration, and law of action-reaction such as in vehicle restraints, sports activities, amusement park rides, and rocket launches. 	<p><u>Earth & Space</u></p> <ul style="list-style-type: none"> • Describe the historical development of evidence that supports plate tectonic theory. • Relate plate tectonics to the formation of crustal features. • Interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering <p><u>Earth & Space</u></p> <ul style="list-style-type: none"> • Recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents. • Identify how global patterns of atmospheric movement influence local weather using weather maps that show high and low pressures and fronts. Identify the role of the oceans in the formation of weather systems such as hurricanes. 	<p><u>Earth & Space</u></p> <ul style="list-style-type: none"> • Recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents. • Identify how global patterns of atmospheric movement influence local weather using weather maps that show high and low pressures and fronts. • Identify the role of the oceans in the formation of weather systems such as hurricanes. <p><u>Matter and Energy</u></p> <ul style="list-style-type: none"> • Describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud. • Identify that protons determine an element's identity and valence electrons determine its chemical properties, including reactivity. • Interpret the arrangement of the Periodic Table, including groups and periods, to explain how properties are used to classify elements. • Recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts. • Investigate how evidence of chemical reactions indicates that new substances with different properties are formed. • Recognize whether a chemical equation containing coefficients is balanced or not and how that relates to the law of conservation of mass.

*Scientific, Investigation and Reasoning Skills are taught throughout the entire school year.

<p align="center">4th Six Weeks January 4 – February 19</p>	<p align="center">5th Six Weeks February 22 – April 8</p>	<p align="center">6th Six Weeks April 11 – May 27</p>
<p><u>Matter and Energy</u></p> <ul style="list-style-type: none"> Describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud. Identify that protons determine an element's identity and valence electrons determine its chemical properties, including reactivity. Interpret the arrangement of the Periodic Table, including groups and periods, to explain how properties are used to classify elements. Recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts. Investigate how evidence of chemical reactions indicates that new substances with different properties are formed. Recognize whether a chemical equation containing coefficients is balanced or not and how that relates to the law of conservation of mass. <p><u>Earth and Space</u></p> <ul style="list-style-type: none"> Model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the Sun causing changes in seasons. Demonstrate and predict the sequence of events in the lunar cycle. Relate the position of the Moon and Sun to their effect on ocean tides. 	<p><u>Earth and Space</u></p> <ul style="list-style-type: none"> Describe components of the universe, including stars, nebulae, and galaxies, and use models such as the Hertzsprung-Russell diagram for classification. Recognize that the Sun is a medium-sized star near the edge of a disc-shaped galaxy of stars and that the Sun is many thousands of times closer to Earth than any other star. Explore how different wavelengths of the electromagnetic spectrum such as light and radio waves are used to gain information about distances and properties of components in the universe. Model and describe how light years are used to measure distances and sizes in the universe. Research how scientific data are used as evidence to develop scientific theories to describe the origin of the universe. <p><u>Organisms and Environments</u></p> <ul style="list-style-type: none"> Describe producer/consumer, predator/prey, and parasite/host relationships as they occur in food webs within marine, freshwater, and terrestrial ecosystems. Investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors such as quantity of light, water, range of temperatures, or soil composition. Explore how short- and long-term environmental changes affect organisms and traits in subsequent populations. Recognize human dependence on ocean systems and explain how human activities such as runoff, artificial reefs, or use of resources have modified these systems. 	<p><u>Matter and Energy</u></p> <p><u>Force, Motion, and Energy</u></p> <p><u>Earth and Space</u></p> <p><u>Scientific Investigation and Reasoning Skills</u></p> <ul style="list-style-type: none"> Application of Science Concepts taught throughout the year reinforcing all 8th grade Science Texas Essential Knowledge and Skills as mandated by the State of Texas in preparation of the STAAR test. STAAR Science test will be administered May 11, 2016.

*Scientific, Investigation and Reasoning Skills are taught throughout the entire school year.

PROCESS STANDARDS

Scientific Investigations and Reasoning Skill TEKS are taught throughout the school year during all content units.

Safe and Environmental Practices

- demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; and
- practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.

Scientific Inquiry

- plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
- design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
- collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;
- construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and
- analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

Scientific Problem Solving

- in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;
- use models to represent aspects of the natural world such as human body systems and plant and animal cells;
- identify advantages and limitations of models such as size, scale, properties, and materials; and
- relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.

Tools and Models

- use appropriate tools to collect, record, and analyze information, including life science models, hand lens, stereoscopes, microscopes, beakers, Petri dishes, microscope slides, graduated cylinders, test tubes, meter sticks, metric rulers, metric tape measures, timing devices, hot plates, balances, thermometers, calculators, water test kits, computers, temperature and pH probes, collecting nets, insect traps, globes, digital cameras, journals/notebooks, and other equipment as needed to teach the curriculum; and
- use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.